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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,288	09/18/2006	Munetaka Watanabe	Q81522	8457
23373 7590 03/16/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER JAHAN, BILKIS				
ART UNIT		PAPER NUMBER		
2814				
MAIL DATE		DELIVERY MODE		
03/16/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/593,288

**Applicant(s)**

WATANABE ET AL.

**Examiner**

BILKIS JAHAN

**Art Unit**

2814

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

\*\*\*\*\*DETAILED ACTION

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uemura (US 6,331,450 B1).

Regarding claim 1, Uemura discloses a transparent positive electrode 113 (Fig. 1, col. 5, lines 15-16) for gallium nitride-based compound (Fig. 1, col. 4, lines 40-41) semiconductor light-emitting devices (Fig. 1, col. 4, lines 40-41), comprising:

- ❖ a contact metal layer 111 (Fig. 1, col. 5, lines 10-11) in contact with a p-type semiconductor layer 106 (Fig. 1, col. 4, line 57),
- ❖ a current diffusing layer 112 (Fig. 1, col. 5, line 13-14) on the contact metal layer 111 (Fig. 1, col. 5, lines 10-11), the current diffusing layer having an electrical conductivity larger than that of the contact metal layer (inherent since materials are same), and
- ❖ a bonding pad layer 320 (Fig. 4A, col. 8, line 28) on the current diffusing layer 112 (Fig. 1, col. 5, line 13-14) .

- ❖ Uemura fails to disclose the thickness of the contact metal layer is from 0.1 to 7.5 nm. However, Uemura discloses the contact metal layer thickness is 0.3 micrometer (col. 5, lines 10-13).
- ❖ However, it would have been obvious to one of ordinary skill in the art to **use any suitable thickness for the device**, because it has been held that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Alner*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955) (see MPEP 2144.04).

Regarding claims 2, 3, Uemura further discloses the contact metal layer is a platinum group metal 111 (Fig. 1, col. 5, lines 10-11) or an alloy containing a platinum group metal and the contact metal layer is platinum 111 (Fig. 1, col. 5, lines 10-11).

Regarding claims 7, 8, Uemura further discloses limitations in claim 1 but does not disclose the current diffusing layer 112 (Fig. 1, col. 5, line 13-14) is a metal selected from the group consisting of gold 112 (Fig. 1, col. 5, line 13-14), silver and copper, or an alloy containing at least one member of gold, silver and copper and the current diffusing layer is gold 112 (Fig. 1, col. 5, line 13-14).

Regarding claim 12, Uemura further discloses a gallium nitride-based compound semiconductor light-emitting device comprising the transparent positive electrode 310 (Fig.

4A, col. 7, lines 64-65) according to any one of claim 1 to 11.

Regarding claim 5-6, 9-11, Uemura discloses limitations in claim 1 but does not disclose the thickness of the contact metal layer is from 0.1 to 5 nm; wherein the thickness of the contact metal layer is from 0.5 to 2.5 nm; the thickness of the current diffusing layer is from 1 to 20 nm; the thickness of the current diffusing layer is from 1 to 10 nm; the thickness of the current diffusing layer is from 3 to 6 nm. However, it would have been obvious to one of ordinary skill in the art to **use any suitable thickness for the device**, because it has been held that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Alner*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955).

### ***Response to Arguments***

Applicant's arguments filed 12/16/08 have been fully considered but they are not persuasive because:

Applicant's argued that "the light-emitting device shown in Fig. 4A is a wire-bonding-type device in which the emitted light is extracted from a positive electrode (310) side. Namely, these are two entirely different types of light-emitting devices, and Uemura neither discloses nor suggests forming the bonding pad layer 320 on the current diffusing layer 112. More particularly, there is no teaching or suggestion within Uemura for modifying and

combining the disparate embodiments disclosed in Fig. 1 (flip-chip-type device -first embodiment) and Fig. 4 (wire-bonding, type device - third embodiment) in the manner suggested by the Examiner." However, Examiner respectfully disagrees about the above arguments because the instant invention claims are not related to any package term or how does the device work that applicant relied on arguments. The Uemura reference clearly discloses bonding pad layer 320 on the current diffusing layer 312 in Fig. 4A. The structures of Uemura's two embodiments (Fig. 1 and Fig. 4A) are very similar as claimed because Uemura's classified two different embodiments based on how those embodiments are emitting light or working or functioning. Therefore, Uemura discloses the bonding pad layer 320 on the current diffusing layer 112, 312 in Figs. 1 and 4A.

Applicant's argued that the references shows "the flip-chip device is mounted on a lead-frame" but the claim 1 does not recited this feature; applicant shows certain features in the claims of applicant's invention, it is noted that the features upon which applicant relies (i.e., the flip-chip device is mounted on a lead-frame) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's also argued that "claim 1 recites that the thickness of the contact metal layer is from 0.1 to 7.5 nm and Uemura does not disclose the claimed thickness range of the contact metal layer."

- ❖ However, Uemura discloses the contact metal layer thickness is 0.3 micro meter (col. 5, lines 10-13).
- ❖ However, it would have been obvious to one of ordinary skill in the art to **use any suitable thickness for the device**, because it has been held that where the general conditions of the claims are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Alner*, 220 F.2d 454, 105 USPQ 233, 235 (CCPA 1955) (see MPEP 2144.04).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BILKIS JAHAN** whose telephone number is (571)270-5022. The examiner can normally be reached on **M-F, 8am-5pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571)-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wai-Sing Louie/  
Primary Examiner, Art Unit 2814

BJ